

### Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (currently amended) A device ~~to remove and recover by-products formed during for processing of~~ a gaseous effluent containing at least hydrogen sulfide (H<sub>2</sub>S) and sulfur dioxide (SO<sub>2</sub>), wherein an organic solvent and at least one catalyst are used, said device comprising:

at least one contactor reactor,

at least one decantation zone for separating liquid sulfur from the organic solvent,

several lines for delivery of at least a gas to be processed, of a fluid comprising at least solvent and catalyst,

several lines for extraction of at least a cleaned gas and of a fluid F containing at least solvent, catalyst, sulfur and by-products resulting from degradation of the catalyst, and

at least a processing zone for processing said fluid F comprising at least solvent, catalyst, sulfur and by-products, said processing zone comprising heating means suited for heating the fluid F to favour crystallization of the by-products and separation means suited to separate for separating the by-products from the rest of said fluid F comprising at least solvent, catalyst and sulfur, and so as to produce at least a fluid F<sub>1</sub> containing mainly solvent, catalyst and sulfur and nearly free of by-products and a fluid F<sub>2</sub> comprising most of the by-products ~~are recovered at the outlet of said processing zone.~~

2. (currently amended) A device as claimed in claim 1, characterized in that the heating means are for example operated-comprises means for heating the fluid F to a temperature between 120 and 180°C, ~~preferably between 120 and 150°C.~~

3. (original) A device as claimed in claim 1, characterized in that decantation zone is situated in the lower part of said contactor reactor.

4. (currently amended) A device as claimed in claim 1, characterized in that the separation means in the processing zone can-comprise-comprises at least one of the means selected from the group consisting of:

filtering means for producing at least fluid F<sub>1</sub> containing mainly solvent and nearly free of by-products, and at least fluid F<sub>2</sub> containing most of the by-products formed, and

capture means for producing at least fluid F<sub>1</sub> containing mainly solvent and nearly free of by-products, and at least fluid F<sub>2</sub> containing most of the by-products formed.

5. (currently amended) A device as claimed in claim 1, ~~characterized in that it comprises~~ further comprising a line allowing to recycle at least part of the solvent from the processing stage to the contactor reactor.

6. (original) A device as claimed in claim 1, characterized in that said contactor reactor is selected from the group consisting of a reactor with random or stacked

packing, a static mixer SMV, an impactor, a hydro-ejector, an atomizer, and a wire contactor.

7. (original) A device as claimed in claim 1, wherein said device is connected to a Claus plant processing  $H_2S$  from natural gas scrubbing operation or crude oil refining operations, and said gaseous effluent is an effluent of the Claus plant.

8. (new) A device as claimed in claim 1, characterized in that the heating means comprises means for heating the fluid F to a temperature between 120 and 150°C.